155 Corona Ave
Pelham 65, N.Y.
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Dr. Joshua Lederberg
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Dear Joshua:

Thanks for your suggestions and the drug-resistant stocks.

Your observations on the anomalous behavior of Maltose seem ~~xxxxxxx~~, in my experiments, to apply also to gal, xyl, ara, and mannitol. I didn't mention this last week because I didn't trust the observation, but I now have data on about 19 ~~xxxxxxxxxxx~~ prin. and 23 complementaries; practically all of them are negative for all fermentations except lactose. I had positive controls on one plate from each lot. Thus, with respect to the sugars, behavior is not meiotic, since several zygotes gave rise to 3 segregants all negative for 5 sugars. Furthermore, I have already started the analysis of an unbiased population of B_1P recombinants, and they, too, are practically all ~~xxx~~ negative for these five sugars. But I don't trust those data, because they were all plus for T, all but one plus for L, which suggests my medium may not have contained threonine as it was supposed to.

This week I am going to cross M^-P^- with W-677 S^rIa^r and test all principals and complementaries for phage resistance and drug resistance in addition to nutrition and fermentations. Apparently lactose is too closely linked to proline to yield the cross-over correlation observation I want, but one of the other loci ought to do it. I shallmake the cross simultaneously on MTL to check the data on B_1P prototrophs.

I think there is no need of a more efficient way to select principals and complementaries. I suspect that mutants to P^+ and to B_1^+ are rare enough in small/colonies so that I can use any colony that is not a (30 hr) complete prototroph, or about 90%.

In case the anomalous segregation of fermentations is due to a peculiarity of the stock, and for other reasons, we have started to develop two new complementary stocks each with 4 amino acid requirements. One is already marked with stable lactose$^-$, and if other fermentation ~~xxxxxxxxxxxx~~ markers come slowly, we can at least obtain drug-resistance and phageresistance markers.

By our methods we can pick and test 60 colonies ~~xxxxxxxxx~~ for all fermentations, nutritional requirements, and drug-resistance in an hour and a half, if they are previously purified. If that is much better than your speed, I'll send you the details.

Sincerely yours,

Gordon Allen

P.S. We have been unable to demonstrate the biotin requirement in among recombinants or among uv-induced back-mutants.